

STATUS: Effective

POLICY NUMBER: MP-007-R0-NPD

SUBJECT: Implementation of Ground Water Quality Standards ([327 IAC 2-11](#))

AUTHORIZED: Thomas W. Easterly, Commissioner

SUPERSEDES: New

ISSUING OFFICE(S): Office of Land Quality, Office of Water Quality

ORIGINALLY EFFECTIVE: December 18, 2008

RENEWED/REVISED:

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1. PURPOSE

This is the IDEM policy interpretation of the responsibilities and authorities of IDEM programs and other Indiana state agencies to apply and implement the Indiana Ground Water Quality Standards (GWQS) at [327 IAC 2-11-2](#).

The regulation was required by a 1989 General Assembly Act to establish standards to be used when state agencies establish 1) their own minimum compliance levels for ground water monitoring purposes, 2) their restrictions on discharge of effluents into potable water, 3) their health protection goals for untreated water in water supply wells, and 4) their concentration limits for contaminants in ambient ground water. This was in response to a 1986 and 1987 study of Indiana ground water protection that noted gaps and areas for improvement in state agency authorities and policies.

The 1989 Act recognized that different agencies regulate different activities and situations. The regulation establishing Ground Water Quality Standards incorporated this understanding and provides framework with flexibility for state agencies to use when adapting it for their purposes.

2. SCOPE

The regulation has two fundamental applications: 1) direction for other IDEM programs and state agencies to consider when regulating activities that may impact ground water quality and 2) authority for IDEM to protect drinking water supply wells and nondrinking water supply wells from excess contamination caused by a person (2-11-2(e), 2-11-2(f) and 2-11-2(g)).

This NPD addresses the following:

- Application of the regulation when an agency or IDEM program is adopting the GWQS to apply them to activities that they regulate.
- Application of the regulation when a person has caused the ground water in a drinking water supply well to have a contaminant concentration that creates an exceedance of the numeric criteria established for drinking water class ground water.
- Application of the regulation when a person causes water in a nondrinking water well to have a contaminant concentration that renders a well unusable for its current use.
- Consequences of a violation of [327 IAC 2-11-2\(e\)](#) or [327 IAC 2-11-2\(f\)](#).
- Application of the GWQS to remedial activities under [IC 13](#) where ground water has been or may be impacted.

3. SUMMARY

- Application of the GWQS when an agency or IDEM program is adopting the GWQS to apply them to activities that they regulate.
- State law requires five state agencies that regulate activities that could impact ground water quality to

adopt regulations and procedures to protect the quality. The agencies are IDEM, the Indiana Department of Natural Resources, the Office of State Chemist, the Office of State Fire Marshal, and the Indiana State Department of Health.

Except for the specific provision protecting the current uses of existing wells, the regulation is not directly enforceable by another state agency or IDEM program office unless a second regulation to apply the GWQS is promulgated by the rulemaking body for that other state agency or IDEM program office.

In the rules promulgated to apply the GWQS, regulatory authorities may include discharge management controls to practices such as 1) storage and containment of substances, 2) permitted discharges of wastewater, 3) land application of industrial byproducts, manure, fertilizer or pesticides, 4) pits, ponds and lagoons, 5) urban drainage to ground water, and 6) septic systems and SDWA Class 5 injection wells. Regulatory authorities may also include management controls for remediation of material released to soil or ground water.

When applying the GWQS, it is important to note that the regulatory definition of "standards" includes three components:

- 1) the numeric and narrative criteria;
- 2) the classification plan; and
- 3) the method of determining where the criteria must apply.

Agencies protect aquifers capable of Class 1 drinking water supply by applying concentration criteria established in the regulation. The criterion for a contaminant is established as a numeric value in a table or it is equal to the natural background concentration if the natural background concentration is higher than the established numeric value. Nondrinking water aquifers circumstances have other concentration criteria.

Agencies are to protect all aquifers by establishing in their regulation a ground water management zone boundary where the concentration criteria is to be achieved or at which an action is to be taken. The boundary is the surface of a three-dimensional shell at a horizontal and vertical distance from the regulated source of the contamination. If an agency determines there is no reason for the agency to have the distance from the regulated source to the boundary be different, the regulation establishes a default 300 foot zone. This boundary is a compliance point. An exceedance at the compliance point will trigger an action to address the noncompliance – this action could include additional monitoring, remediation activities, or an enforcement action depending on the agency regulation.

When an agency or IDEM program office adopts a regulation to implement the ground water quality standards, factors to be considered for applying the standards in that program may include:

- nature of the contaminant or contaminants present;
- hydrogeologic conditions;
- potential impacts to the environment;
- risk of human exposure; and
- technological and economic reasonableness.

Agencies and IDEM program offices should use specific knowledge about the activity to be regulated and incorporate that knowledge into their regulatory framework when adopting the GWQS to minimize or eliminate potential adverse impacts to existing ground water quality.

- Direct application of the GWQS when a person has caused the ground water in a drinking water supply well to have a contaminant concentration that exceeds the numeric criteria established for drinking water class ground water.

The GWQS specifically prohibit any person from causing contaminant level exceedances to drinking water wells ([327 IAC 2-11-2\(e\)](#)). Regardless of independent regulatory authorities of other state agencies, this provision is directly enforceable by IDEM¹. The purpose of this provision is for expeditious protection of drinking water wells from human caused releases.

The change in ground water quality in a drinking water supply well that triggers an IDEM response under the regulation is any one of four conditions:

- (1) An exceedance of the numeric criteria established for drinking water class ground water in Tables (section) 6(a)(1) and 6(a)(2) of this rule.
- (2) A level sufficient to be acutely or chronically toxic, carcinogenic, mutagenic, teratogenic, or otherwise injurious to human health based on best scientific information.

- (3) An exceedance of one or more of the following indicator levels:
 - (A) Chloride at 250 milligrams per liter.
 - (B) Sulfate at 250 milligrams per liter.
 - (C) Total dissolved solids at 500 milligrams per liter.
 - (D) Total coliform bacteria at nondetect.
- (4) Renders the well unusable for normal domestic use. ([327 IAC 2-11-2\(e\)](#))

IDEM considers the natural background concentration when determining compliance for exceedances under (1) and (3) above. Any exceedance due solely to natural background will not trigger a response. This is due to three reasons. First, the drinking water criteria themselves do not use the criteria tables when the natural background exceeds the table concentrations. Second, the goals for the criteria address the human activity specifically, not natural background. Thirdly, this provision itself addresses only the component that a person causes.

For the numeric values in the tables, IDEM policy is that an exceedance is 1) an increment above natural background using a level of quantification acceptable to IDEM where natural background exceeds the specified numeric concentration values or 2) a value above the numeric concentration value where natural background does not exceed the specified numeric concentration value.

- Direct application of the GWQS when a person causes ground water in a nondrinking water supply well to have a contaminant concentration that renders a well unusable for its current use.

The trigger for noncompliance is contamination caused by a person that renders the well unusable for its current use.

IDEM policy is that this provision applies to such nondrinking water supply wells as industrial, commercial or agricultural supply wells. It does not apply to protection of nonsupply wells such as monitoring wells or wells used for disposal under the Safe Drinking Water Act.

IDEM policy is that "unusable for its current use" means for a use that is reasonable for the natural aquifer quality and that was in place at the time that the harmful contaminant concentration was discovered.

- Consequences of a violation of [327 IAC 2-11-2\(e\)](#) or [327 IAC 2-11-2\(f\)](#).

IDEM policy about the consequence of violation of provisions (e) and (f) harming a water supply well is to reduce or eliminate the risk to the health of the consumer of the well water if the issue is a threat to health and to replace or treat water if the issue is that the water cannot be used for normal domestic use. The person causing the threat could be either the well owner or a second party. It could be from incidents like a one-time spill, legal application of a chemical to the land for a beneficial purpose, an ongoing slow release due to storage tank or piping leak, or contamination of land from previous owner with a decades old plume.

Options for addressing noncompliance with this provision depend on the nature of the contaminant and the situation and include but are not limited to: removing the source of contamination, remediating contaminated soil between the source and the well, actively or passively remediating the ground water, providing suitable water from another source for the user, installing a barrier well to halt spread of contamination, and moving the user well to a different depth or location.

- Application of the GWQS to remedial activities under [IC 13](#) where ground water has been or may be impacted.

The GWQS apply under [IC 13](#) in two ways: 1) when the GWQS are adopted into Solid Waste Management Board regulations as implemented by the Office of Land Quality under its policies and procedures (as has been done in the landfill regulations) and 2) when health risks are determined to be caused by a person at a drinking water supply well (and possibly when a nondrinking water supply well is rendered unusable by a person).

4. DEFINITIONS

"Community Water System" means a public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

"Department" means the Indiana Department of Environmental Management.

"Finished Water" means water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system, for example, booster disinfection, addition of corrosion control chemicals.

"Ground Water Quality Standards" or "GWQS" means the standards outlined in the Indiana Administrative Code at [327 IAC 2-11](#), which were adopted by the Water Pollution Control Board to satisfy [IC 13-18-17-5\(a\)](#): "The board shall adopt rules under [IC 4-22-2](#) establishing groundwater quality standards that include numeric and narrative criteria, a groundwater classification plan and a method of determining where the groundwater quality standards must apply."

"Maximum Contaminant Level" or "MCL" means the maximum permissible levels of a contaminant in water that is delivered to the free flowing outlet of the ultimate user of a public water system, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

"Maximum Contaminant Level Goal" or "MCLG" means the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur and that includes an adequate margin of safety. MCLGs are unenforceable health goals. In most cases, these are applicable at the entry point to a public water system after any treatment.

"Noncommunity Water System" means a public water system that has at least 15 service connections used by nonresidents or regularly serves 25 or more nonresident individuals daily for at least 60 days per year.

"Person" means an individual, a partnership, a copartnership, a firm, a company, a corporation, an association, a joint stock company, a trust, an estate, a municipal corporation, a city, a school city, a town, a school town, a school district, a school corporation, a county, any consolidated unit of government, political subdivision, state agency, a contractor, or any other legal entity.

"Public water system" means a public water supply for the provision to the public of water for human consumption through pipes or other constructed conveyances, if the system has at least 15 service connections or regularly serves 25 individuals at least 60 days of the year. The term includes any:

- (a) collection, treatment, storage, and distribution facilities under control of the operator of the system and used primarily in connection with the system; and
- (b) collection or pretreatment storage facilities not under such control that are used primarily in connection with the system.

A public water system is either a community or a noncommunity water system.

"Safe Drinking Water Act" or "SDWA" means the Act originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells.

"U.S. EPA" means the United States Environmental Protection Agency.

"Water Pollution Control Board" or "WPCB" means the independent board established by Indiana Code at [IC 13-18-1](#).

5. ROLES

The Department, Indiana Department of Natural Resources, Office of State Chemist, Office of State Fire Marshal, and Indiana State Department of Health are expected to have considered and, to the extent each determines appropriate and consistent with their authority, adopt regulations to implement the ground water quality standards.

When an agency or IDEM program office adopts a regulation to implement the ground water quality standards, it will use its own regulatory authority to enforce those regulations.

IDEM is responsible for taking appropriate action if an exceedance at a well of the numeric criteria is determined under [327 IAC 2-11-2\(e\)\(1\)](#); the level of a contaminant in ground water is sufficient to require action under [327 IAC 2-11-2\(e\)\(2\)](#); or an exceedance of the indicator level is determined under [327 IAC 2-11-2\(e\)\(3\)](#); or a drinking

water well is rendered unusable under [327 IAC 2-11-2\(e\)\(4\)](#) or if a nondrinking water well is rendered unusable for its current use under [327 IAC 2-11-2\(f\)](#).

IDEM actions required for protection of public health or other use from an exceedance at a well will be determined by the IDEM OLQ. OLQ will be the lead office at IDEM for implementation through the appropriate OLQ program such as state cleanup, voluntary remediation, leaking underground storage tanks, hazardous waste corrective action, or superfund.

The IDEM Office of Water Quality or the Office of Land Quality will investigate complaints of potential violations of the IDEM regulations implementing the GWQS. If it is determined there is a violation of the GWQS, then it will be referred to the appropriate IDEM program for appropriate action.

Proposed changes to the ground water quality standards rule itself will be developed by IDEM by the Ground Water Section of the Drinking Water Branch of the Office of Water Quality. The Ground Water Section will, as appropriate, work with other IDEM offices and programs, other agencies, and stakeholders on proposed rule revision language prior to presenting the changes to the Water Pollution Control Board for consideration.

6. POLICY

6.1. Other agencies and IDEM program offices must adopt the standards before they are applicable to an activity that the individual agency regulates. The standards include the numeric and narrative criteria, the classification system, and the point of standards application.

6.2. When other agencies are adopting the standards, they should develop their regulatory approach based on their knowledge of the activity. The application of the GWQS can and should be customized to the specific regulatory activity to enhance ground water protection and provide regulatory flexibility.

6.3. The GWQS does not limit or expand other agencies' authority.

6.4. The GWQS allows risk-based cleanup and other remedial solutions to address ground water contamination.

6.5. IDEM has the authority to require remedial activities if a person has caused a currently used drinking water supply well to exceed certain contaminant measures or if a person renders a nondrinking water supply well unusable for its current use due to contamination.

6.6. When it is determined by IDEM that a person has caused the ground water in a drinking water supply well to have a contaminant concentration that creates an exceedance of the numeric criteria established for drinking water class ground water, IDEM will maintain and protect the quality of Indiana's ground water and ensure that exposure to ground water will not pose a threat to human health, any natural resources, or the environment.

6.7. IDEM will determine the appropriate means of addressing the exceedance of the numeric criteria, which may include, but are not limited to, eliminating exposure to the ground water that has a contaminant concentration that exceeds the criteria, remediating the ground water to remove the contaminant concentration that exceeds the criteria through treatment of the water, removal of the contaminant source or utilizing other options designed to ensure that exposure to the ground water will not pose a threat to human health.

6.8. When it is determined by IDEM that a person has caused the ground water in a water supply well to have a contaminant concentration that renders the well unusable for its current use, IDEM will maintain and protect the quality of Indiana's ground water and ensure that current uses are protected.

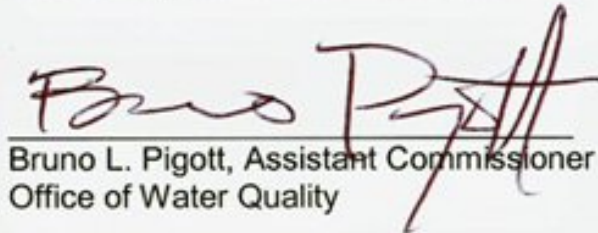
6.9. IDEM will determine the appropriate means of addressing the loss of use of a water supply well which may include, but is not limited to, replacing the lost use with another source, remediating the ground water to remove the contaminant concentration that is causing the loss of use through treatment of the water, removal of the contaminant source or utilizing other options designed to ensure the continued use of the ground water.

7. REFERENCES

8. SIGNATURES


Thomas W. Easterly, Commissioner
Indiana Department of Environmental Management


8/18/09
Date


Bruno L. Pigott, Assistant Commissioner
Office of Water Quality

8/18/09
Date


Bruce H. Palin, Assistant Commissioner
Office of Land Quality

8/17/09
Date


David R. Joest, Assistant Commissioner
Office of Legal Counsel and
Office of Criminal Investigations

08/17/09
Date

This policy is consistent with Agency requirements.


Lowell Jackson
Quality Assurance Program, Planning and Assessment
Indiana Department of Environmental Management

8-18-09
Date

¹ If this provision happens to conflict with the State Fire Code it is the State Fire Code that takes precedence, according to explicit state law found at [IC 22-13-2-3](#).